

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of:)	
)	
Allocation and Designation of Spectrum for)	
Fixed-Satellite Services in the 37.5-38.5 GHz,)	
40.5-41.5 GHz and 48.2-50.2 GHz Frequency)	IB Docket No. 97-95
Bands; Allocation of Spectrum to Upgrade Fixed)	
and Mobile Allocations in the 40.5-42.5 GHz)	RM-8811
Frequency Band; Allocation of Spectrum in the)	
46.9-47.0 GHz Frequency Band for Wireless)	
Services; and Allocation of Spectrum in the)	
37.0-38.0 GHz and 40.0-40.5 GHz for)	
Government Operations)	

COMMENTS OF HUGHES COMMUNICATIONS, INC.

September 4, 2001

Gary M. Epstein
John P. Janka
Arthur S. Landerholm
Dori K. Bailey
LATHAM & WATKINS
Suite 1000
555 Eleventh Street
Washington, DC 20004
(202) 637-2200

TABLE OF CONTENTS

EXECUTIVE SUMMARY	ii
<u>I.</u> <u>THE RECORD IN THIS DOCKET AND THE RESULTS OF WRC-2000 CALL FOR ADDITIONAL SATELLITE SPECTRUM AT V-BAND</u>	1
<u>II.</u> <u>THE HUGHES APPROACH: 3 GHZ OF PAIRED V-BAND SPECTRUM FOR SATELLITES</u>	5
<u>III.</u> <u>PROPOSED ALLOCATION AND DESIGNATION CHANGES</u>	8
<u>IV.</u> <u>THE COMMISSION SHOULD ADOPT THE WRC-2000 PROVISIONAL PFD LIMITS PENDING THE OUTCOME OF WRC-03</u>	10
<u>V.</u> <u>EARTH STATION LIMITATIONS</u>	11
<u>VI.</u> <u>CONCLUSION</u>	12

EXECUTIVE SUMMARY

Hughes is not alone in its belief that the V-band will provide critical expansion spectrum for next-generation FSS, BSS and MSS systems. Indeed, the record in this docket, along with the fifteen pending satellite system applications for V-band spectrum, confirm that a broad consensus of the satellite industry agrees that it is critical that the Commission allocate and make available sufficient spectrum at V-band for satellite use. The record in this docket is also clear that there is a consensus among the satellite industry that the Commission's existing allocation of 2 GHz of paired V-band spectrum for high frequency satellite use is insufficient to promote, and indeed will have a profound effect on, the development of satellite systems at V-band.

The FNPRM provides the Commission the opportunity to go beyond simply rearranging the existing terrestrial and satellite V-band allocations and designations, and to reapportion and equalize the terrestrial and satellite V-band allocations and designations in a way that comports with the record in this docket and the external developments since the Commission's Order on Reconsideration. Unfortunately, the Commission's proposals in the FNPRM largely do not take advantage of this opportunity and, instead, benefit the terrestrial fixed service, the U.S. Government, and the radio astronomy community all at the expense of the satellite industry. Hughes believes that an alternative approach can satisfy more equitably the needs of all V-band spectrum users, and can accommodate the results of WRC-2000.

The developments since the Commission's Order on Reconsideration make clear that the Commission can easily designate an additional 1 GHz of paired V-band spectrum for satellite use without harming any other interested parties. Specifically, the Commission can designate an additional 1 GHz of spectrum for satellite uplinks at 47.2-48.2 GHz. HAPS

proponents have abandoned this spectrum, and no other terrestrial interest has expressed a need, or even a desire, for spectrum in the 47.2-48.2 GHz band. Designation of that spectrum to satellites will provide a critical, contiguous 3 GHz band for satellite uplinks at 47.2-50.2 GHz.

The Commission can and should allocate and designate the 40.0-42.0 GHz band for satellite use. Moreover, Hughes believes that there is at least an additional 1 GHz of spectrum (for a total of 3 GHz) that can be designated for downlinks to ubiquitous satellite earth terminals. The 37.6-38.6 GHz band provides the most promising option for the additional 1 GHz of downlink spectrum as there is currently no terrestrial fixed service – either actual or planned – in the band. Another option to provide the additional 1 GHz of spectrum would be to designate 500 MHz of the 37.6-38.6 GHz band along with the 42.0-42.5 GHz band for satellite use, provided that WRC-03 and the Commission develop a commercially-workable out-of-band emission pfd limit to protect radio astronomy operations in the 42.5-43.5 GHz band.

Regrettably, the Commission's proposal to shift the band anticipated for Government FSS and MSS from 39.5-40.5 GHz to 40.0-41.0 GHz shifts the burden of coordinating with these Government systems from a burden that is shared between commercial fixed service and commercial satellite interests to a burden that falls solely on commercial satellite interests. It is inappropriate and inequitable to disproportionately burden commercial satellite interests with the risk of coordination with Government systems. Therefore, the Commission should not add Government FSS or MSS allocations at 40.5-41.0 GHz at this time.

Hughes suggests that the Commission adopt the much preferable WRC-2000 pfd limit formulation, and the WRC-2000 pfd values, for the 37.5-40.0 GHz band.

Lastly, the Commission's proposed limitation and restriction with respect to earth terminals in the 37.5-40.0 GHz band should exclude the 1 GHz of spectrum at the 37.6-38.6 GHz

band. Moreover, the Commission’s proposal to proscribe service to “individual consumers” in the 37.5-40.0 GHz band appears to be unnecessarily overbroad and unduly restrictive.

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of:)	
)	
Allocation and Designation of Spectrum for)	
Fixed-Satellite Services in the 37.5-38.5 GHz,)	
40.5-41.5 GHz and 48.2-50.2 GHz Frequency)	IB Docket No. 97-95
Bands; Allocation of Spectrum to Upgrade Fixed)	
and Mobile Allocations in the 40.5-42.5 GHz)	RM-8811
Frequency Band; Allocation of Spectrum in the)	
46.9-47.0 GHz Frequency Band for Wireless)	
Services; and Allocation of Spectrum in the)	
37.0-38.0 GHz and 40.0-40.5 GHz for)	
Government Operations)	

COMMENTS OF HUGHES COMMUNICATIONS, INC.

Hughes Communications, Inc. (“*Hughes*”) submits these Comments in response to the Commission’s above-captioned Further Notice of Proposed Rulemaking (“*FNPRM*”), which proposes to modify the domestic allocation and designation plan for the 36 -51.4 GHz band (the “*V-band*”).¹

I. THE RECORD IN THIS DOCKET AND THE RESULTS OF WRC-2000 CALL FOR ADDITIONAL SATELLITE SPECTRUM AT V-BAND

As the Commission is undoubtedly aware, Hughes has a keen interest in this proceeding and in the use of the V-band for satellite systems. Hughes has participated

¹ *In the Matter of Allocation and Designation for Fixed-Satellite Services in the 37.5-38.5 GHz, 40.5-41.5 GHz, and 48.2-50.2 GHz Frequency Bands; Allocation of Spectrum to Upgrade Fixed and Mobile Allocations in the 40.5-42.5 GHz Frequency Band; Allocation of Spectrum in the 46.9-47.0 GHz Frequency Band for Wireless Services; and Allocation of Spectrum in the 37.0-38.0 GHz and 40.0-40.5 GHz for Government Operations*, Report and Order, 13 FCC Rcd 24649 (1998) (“*Band Plan Order*”).

extensively in the proceedings in this docket,² and in other proceedings related to the use of the V-band.³ Furthermore, Hughes has filed three discrete satellite system applications to provide advanced Fixed-Satellite Service (“FSS”), Broadcast Satellite Service (“BSS”), and Mobile Satellite Service (“MSS”) offerings at V-band.⁴ As Hughes has consistently maintained in this docket,⁵ the V-band and Hughes’s applications to provide service in that spectrum play a prominent role in Hughes’s long-term business plans.

Moreover, Hughes is not alone in its belief that the V-band will provide critical expansion spectrum for next-generation FSS, BSS and MSS systems.⁶ Indeed, the record in this docket,⁷ along with the fifteen pending satellite system applications for V-band spectrum,⁸ confirm that a broad consensus of the satellite industry agrees with Hughes that it is critical that the Commission allocate and make available sufficient expansion spectrum at V-band for

² Comments of Hughes Communications, Inc., IB Docket No. 97-95 (filed May 5, 1997) (“*HCI Comments*”); Reply Comments of Hughes Communications, Inc., IB Docket No. 97-95 (filed June 3, 1997) (“*HCI Reply Comments*”); Petition for Reconsideration, IB Docket No. 97-95 (filed Feb. 16, 1999) (“*Petition for Reconsideration*”).

³ See, e.g., Comments of Hughes Communications, Inc., WT Docket No. 98-136 (filed Sept. 21, 1998); Reply Comments of Hughes Communications, Inc., WT Docket No. 98-136 (filed Oct 13, 1998).

⁴ SpaceCast Application of Hughes Communications, Inc. (filed Sept. 1997), Amended and Restated Expressway Application of Hughes Communications, Inc. (filed Sept. 1997); Starlynx Application of Hughes Communications, Inc. (filed Sept. 1997).

⁵ HCI Comments at 4; see generally HCI Reply Comments; Petition for Reconsideration at 5-6.

⁶ HCI Reply Comments at 5 (citing Comments of GE American Communications, Inc. at 5 (“*GE Comments*”); Comments of Motorola Satellite Systems, Inc. at 8 (“*Motorola Comments*”); Comments of the Satellite Industry Association, at 2 (“*SIA Comments*”); Comments of Lockheed Martin Corporation at 16 (BSS systems) (“*Lockheed Comments*”); Comments of TRW, Inc. at 10 (BSS systems) (“*TRW Comments*”)).

⁷ HCI Comments at 9; HCI Reply Comments at 4; see generally HCI Reply Comments at 5-6 (citing GE Comments at 1-2, 4-5; Motorola Comments at 8).

⁸ See Band Plan Order at ¶11, ¶25.

satellite use. The record in this docket is also clear that there is a consensus among the satellite industry that the Commission's existing allocation of 2 GHz of paired V-band spectrum for high frequency satellite use is insufficient to promote, and indeed will have a profoundly negative effect on, the development of satellite systems at V-band.⁹ The passage of time since the record was originally developed in this docket has not done anything to alter these clear imperatives.

Promoting the development of advanced satellite systems at V-band should be an important goal for the Commission. The Commission has maintained a policy of promoting competition in telecommunications services to provide the public with as wide an array of services and technology as is commercially feasible. Commercial satellite systems are an essential form of communications technology in the United States and around the world. Satellites provide ubiquitous coverage at a cost that is distance insensitive. This unique characteristic has facilitated the critical role that satellites play in serving the communications needs of rural communities and providing video distribution services, enterprise network services and more recently, broadband Internet services for both consumers and business. Satellite systems also provide emergency services, mobile services, back up for terrestrial networks, and Supervisory Control and Data Acquisition ("SCADA") systems.

⁹ HCI Comments at 3, 10-12; HCI Reply Comments at 7 ("The satellite industry is nearly unanimous in the view that the Commission's proposal to designate only 2 GHz in each direction for satellite use would severely impair the viability of future broadband satellite systems at 40 GHz, and, in doing so, would leave the future demand for these systems unsatisfied.") (citing GE Comments at 3; Lockheed Comments at 3; Motorola Comments at 5; SIA Comments at 2; TRW Comments at 3); Petition for Reconsideration at 2, 4 ("Seven of these applications requested the use of at least 6 GHz of V Band spectrum.") (citing Applications of Hughes Communications, Inc. (SpaceCast and Expressway), Motorola, Inc. (M-Star), GE American Communications (GE*StarPlus), Lockheed Martin Corporation (Global Q/V-Band Satellite Communications System), TRW Inc. (TRW Global EHF Satellite Network), PanAmSat Corporation (V-Stream)); Band Plan Order at ¶27 ("The majority of satellite commenters argue that they need more spectrum designated for long term satellite use than the 4 gigahertz proposed in the NPRM.").

Since the Order on Reconsideration in this docket,¹⁰ developments inside and outside of the Commission, including the results of the 2000 World Radiocommunication Conference (“*WRC-2000*”), demonstrate that the Commission can and should allocate and designate additional V-band spectrum for satellite use. As the Commission notes in the FNPRM, the High Altitude Platform Service operators have withdrawn their interest in the spectrum at 47.2-48.2 GHz,¹¹ which should permit additional spectrum for satellite uplinks. In addition, financial obstacles facing V-band terrestrial fixed service providers,¹² make FS expansion at V-band unlikely. Moreover, both the U.S. preparatory process for WRC-2000 and the WRC-2000 results make clear, as Hughes has maintained consistently in this docket,¹³ that U.S. fixed service providers have exhibited little interest in or need for spectrum outside of the 38.6 - 40.0 GHz band. These latter two developments should provide the opportunity for additional spectrum for satellite downlinks.

Thus, the FNPRM provides the Commission the opportunity to go beyond simply rearranging the existing terrestrial and satellite V-band allocations and designations, and to reapportion and equalize the terrestrial and satellite V-band allocations and designations in a way

¹⁰ *In the Matter of Allocation and Designation of Spectrum for Fixed-Satellite Services in the 37.5-38.5 GHz, 40.5-41.5 GHz, and 48.2-50.2 GHz Frequency Bands; Allocation of Spectrum to Upgrade Fixed and Mobile Allocations in the 40.5-42.5 GHz Frequency Band; Allocation of Spectrum in the 46.9-47.0 GHz Frequency Band for Wireless Services; and Allocation of Spectrum in the 37.0-38.0 GHz and 40.0 40.5 GHz for Government Operations*, Order on Reconsideration, FCC 99-375 (1999) (“*Reconsideration Order*”).

¹¹ FNPRM at ¶30.

¹² See, e.g., *Fixed Wireless Firm Files for Bankruptcy*, CNET News.com, <http://news.cnet.com/news/0-1004-200-5465752.html> (April 3, 2001) (Advanced Radio Telecom to file for bankruptcy and discontinue operations).

¹³ HCI Reply Comments at 11 (“[T]he terrestrial industry was virtually silent as to its need, or even its desire, for terrestrial spectrum designations outside the 38.6-40.0 GHz band.”); Petition for Reconsideration at 2, 5.

that comports with the record in this docket, the external developments since the Commission's Order on Reconsideration and the record that Hughes is confident will be developed in response to the FNPRM. Unfortunately, the Commission's proposals in the FNPRM largely do not take advantage of this opportunity and, instead, benefit the terrestrial fixed service, the U.S. Government, and the radio astronomy community all at the expense of the satellite industry. Hughes believes that an alternative approach can satisfy more equitably the needs of all V-band spectrum users, and can accommodate the results of WRC-2000.

II. THE HUGHES APPROACH: 3 GHZ OF PAIRED V-BAND SPECTRUM FOR SATELLITES

As is set forth in the FNPRM, the Commission's current band plan for the V-band designates 2 GHz of paired spectrum for satellite use. The developments since the Commission's Order on Reconsideration in this docket make clear that the Commission can easily designate an additional 1 GHz of paired V-band spectrum for satellite use without harming any other interested parties. Specifically, the Commission can designate an additional 1 GHz of spectrum for satellite uplinks at 47.2-48.2 GHz. As the FNPRM makes clear, HAPS proponents have abandoned this spectrum, and no other terrestrial interest has expressed in this docket a need, or even a desire, for spectrum in the 47.2-48.2 GHz band. Designation of that spectrum to satellites will provide a critical, contiguous 3 GHz band for satellite uplinks at 47.2-50.2 GHz. There is simply no rational reason to retain the Commission's current designation of this spectrum for wireless services.

Furthermore, the satellite/terrestrial compromise reached as a part of the U.S. preparatory process for WRC-2000 and, indeed, the results of WRC-2000 make clear that additional spectrum is available for satellite use in the V-band downlink frequencies as well. The "soft segmentation" approach evinced by this compromise and the pfd limits adopted by

WRC-2000 demonstrates that the Commission can and should allocate and designate the 40.0-42.0 GHz band for satellite use. Furthermore, Hughes believes that there is at least an additional 1 GHz of spectrum (for a total of 3 GHz) that can be designated for downlinks to ubiquitous satellite earth terminals.

The 37.6-38.6 GHz band provides the most promising option for the additional 1 GHz of satellite downlink spectrum. The Commission's band plan for V-band currently designates the 37.6-38.6 GHz band for satellite use and, therefore, there is currently no terrestrial fixed service deployment -- either actual or planned -- in the band. Moreover, although the record in this docket does not demonstrate a need for terrestrial fixed wireless V-band spectrum outside of the 38.6 - 40.0 GHz band, the 1.6 GHz of spectrum allocated at 36.0-37.6 GHz for the fixed service, together with spectrum available in other lower frequency fixed service bands,¹⁴ and, potentially, the 500 MHz at 42.0 - 42.5 GHz, should prove ample to support any long-term expansion needs of the fixed service at V-band.

Another option to provide the additional 1 GHz of satellite downlink spectrum would be to designate 500 MHz of the 37.6 - 38.6 GHz band along with the 42.0-42.5 GHz band for satellite use. Such an arrangement might provide for a greater amount of contiguous spectrum for both satellite and fixed service interests. However, for satellite interests to utilize the 42.0-42.5 GHz band, the out-of-band emission pfd limit adopted provisionally at WRC-2000 to protect radio astronomy operations at 42.5-43.5 would need to be significantly relaxed. Hughes understands that papers submitted as a part of the U.S. preparatory process for WRC-03 propose modification of these pfd limits to allow greater satellite use of the adjacent spectrum while providing more realistic protection of radio astronomy operations. Thus, satellite use of

¹⁴ The 1 GHz of LMDS spectrum at Ka band also remains essentially fallow in the U.S.

the 42.0-42.5 GHz band may be feasible if the necessary changes are agreed to at WRC-03 and implemented by the Commission.

Thus, Hughes's proposal is designed to provide satellite systems 3 GHz of paired spectrum that is usable for service to and from ubiquitous earth terminals, which is critical for the success of these advanced satellite systems. However, a significant cloud on the ability of commercial satellite providers to utilize up to 1 GHz of this spectrum is the largely undescribed desire of U.S. military FSS and MSS systems for spectrum at 40.0-41.0 GHz.¹⁵ Neither terrestrial nor satellite interests can meaningfully comment on the opportunity for realistic commercial use of this band, and therefore the FNPRM proposals for this spectrum, without some idea of the ability of commercial and government systems to meaningfully share spectrum on a co-primary basis. The Commission must endeavor to make available additional information from NTIA regarding U.S. government planned use of this band prior to the resolution of the FNPRM proposals.

Moreover, the Commission's proposal to shift the band anticipated for Government FSS and MSS use from 39.5-40.5 GHz to 40.0-41.0 GHz¹⁶ shifts the burden of coordinating with these Government systems from a burden that is shared between commercial fixed service and commercial satellite interests to a burden that falls solely on commercial satellite interests. Unless it is clear that Government use of the band will not hamper commercial satellite use of the band, it is inappropriate and inequitable to disproportionately burden commercial satellite interests with the risk of coordination with Government systems. Therefore,

¹⁵ Letter from William T. Hatch, Office of Spectrum Management, NTIA, to Bruce Franca, Office of Engineering and Technology, FCC at 1 (March 2, 2001) ("*NTIA Letter*"); 47 C.F.R. §2.106 fn.G117.

¹⁶ See FNPRM at ¶26.

the Commission should not add Government FSS or MSS allocations at 40.5-41.0 GHz at this time.

Therefore, within the overall framework provided by this proposal, Hughes provides specific comments below on the Commission's proposals in the FNPRM.

III. PROPOSED ALLOCATION AND DESIGNATION CHANGES

Consistent with Hughes's proposal for 3 GHz of paired spectrum for satellites, Hughes supports the Commission's proposal¹⁷ to switch the designation at 41.0-42.0 GHz from terrestrial to satellite. However, for the reasons discussed above, Hughes believes that the Commission should retain the satellite designation at 37.6-38.6 GHz and should convert the designation at 47.2-48.2 GHz from terrestrial wireless services to satellite use. With appropriate power flux density ("*pf_d*") limits (see discussion below), this plan will provide 3 GHz of paired V-band spectrum for deployment of ubiquitous satellite earth terminals, which is critical for the success of V-band satellite systems. Hughes also supports the additional allocation and designation changes necessary to effect this plan, including the Commission's proposals to add a primary non-government FSS allocation to the 41.0-42.0 GHz band¹⁸ and to the 37.5-37.6 GHz band.¹⁹

If WRC-03 and the Commission sufficiently relax the out-of-band emission pfd limit applicable to the 42.5 – 43.5 GHz band to allow satellite use of the 42.0 - 42.5 GHz band, and if the Commission determines that that band is a better alternative for additional satellite downlink spectrum, then the Commission should also add an FSS allocation at 42.0-42.5 GHz and should designate that band for FSS and BSS use. In any event, in order to preserve

¹⁷ FNPRM at ¶15.

¹⁸ FNPRM at ¶27.

maximum flexibility for potential future use of the band by satellite licensees, the Commission should not delete the BSS allocation at 42.0-42.5 GHz.

Furthermore, in order to preserve the ability of the satellite services to use the 47.2-48.2 GHz band, the Commission should maintain the current allocation scheme -- to which NTIA has agreed -- which allocates the 42.5-43.5 GHz band for exclusive Government use and the 47.2-48.2 GHz band for exclusive non-Government use. Designating the 47.2-48.2 GHz band for exclusive Government use would prevent satellites from using a much-needed uplink band and would likely not permit extensive commercial use of the 42.5-43.5 GHz band because of the radio astronomy uses of that band. Moreover, NTIA's most recent submission to the Commission on this topic²⁰ indicates that Federal agencies are presently planning for use of the 42.5-43.5 GHz band.

Hughes also supports the Commission's proposal²¹ to add an MSS designation for non-government systems at 40.5-41.0 GHz. Hughes agrees with the Commission²² that satellite licensees need the maximum flexibility to implement their systems and, especially as Hughes has proposed a V-band MSS system, the Commission should make provision for non-government MSS systems at V-band. Hughes understands that the ITU international table of allocations only contains a secondary MSS allocation for 40.5-41.0 GHz in Region 2, but Hughes believes that the U.S. can successfully undertake an effort to upgrade that international allocation to primary status. However, as discussed above, the Commission should not adopt a primary Government MSS allocation at 40.5-41.0 GHz unless and until it is clear that government use of that spectrum

¹⁹ FNPRM at ¶19.

²⁰ NTIA Letter at 2.

²¹ FNPRM at ¶16.

²² *Id.*

will not interfere with the deployment and operation of commercial systems in the same spectrum.

IV. THE COMMISSION SHOULD ADOPT THE WRC-2000 PROVISIONAL PFD LIMITS PENDING THE OUTCOME OF WRC-03

The Commission notes that its proposed pfd limits for the 37.5-40.0 GHz band adopt a different formulation from the provisional limits adopted at WRC-2000.²³ The WRC-2000 formulation set higher pfd limits to account for fade conditions prevalent at V-band and, in Region 2, required coordination among administrations for deployment of satellite systems with pfd levels that exceed the listed pfd limits minus 12 dB.²⁴ The Commission's proposal sets lower pfd levels but allows operators to increase power by 12 dB during fade conditions to account for increased propagation loss.²⁵

The WRC-2000 formulation of these pfd limits is much preferable to the Commission formulation. Satellite operators have every incentive to reduce power when it is not needed to overcome fade conditions. Furthermore, the Commission's proposal is much more complicated to implement. It is unclear from the Commission's proposal when and how often fade compensation is permitted and how it is monitored. Moreover, it is difficult to specify exactly when this additional 12 dB can be added to the pfd limit because fade compensation on the downlink can be implemented in different ways. In addition, the Commission's proposal would require satellite operators to implement unproven technology that would have a significant impact on business plans.

²³ FNPRM at ¶36.

²⁴ See ITU Resolution 84 (WRC-2000), resolves 2.

²⁵ FNPRM at ¶37, ¶¶41-42.

The subject of downlink fade compensation is currently under study by the ITU-R pursuant to Resolution 84 (WRC-2000). These studies are crucial to what is a very complicated and novel area. Therefore, Hughes suggests that the Commission adopt the WRC-2000 pfd limit formulation, and the WRC-2000 pfd values, for the 37.5-40.0 GHz band, at least until the ITU-R study group process completes further study of the fade compensation question.

Finally, as indicated above, Hughes believes that out-of-band emission pfd limit for satellite operations at 42.0-42.5 GHz adopted provisionally at WRC-2000 to protect radio astronomy operations at 42.5-43.5 GHz can be significantly relaxed, while providing sufficient protection of radio astronomy operations. The relaxation of these limits would allow greater satellite use of the spectrum adjacent to 42.5-43.5 GHz. Thus, pending further study of the provisional limits in advance of WRC-03, the Commission should not adopt those provisional pfd limits of WRC-2000 at this time.

V. EARTH STATION LIMITATIONS

As discussed above, Hughes proposes that the Commission retain the satellite designation in the 37.6-38.6 GHz band. This proposal, along with the Commission's proposed designation of the 40.0-42.0 GHz band for satellites, would provide the 3 GHz of satellite downlink spectrum that is needed for ubiquitous earth terminal deployment. In the FNPRM, the Commission proposed to limit the satellite earth station operations that may be deployed in the 37.5-40.0 GHz band only to "gateway" facilities.²⁶ The Commission further proposed to restrict satellite earth station facilities in this band by prohibiting ubiquitous deployment and those facilities that serve "individual consumers."²⁷ As Hughes has maintained in these Comments,

²⁶ FNPRM at ¶46.

²⁷ FNPRM at ¶47.

retention of the satellite designation in the 37.6-38.6 GHz band is critical for the success of advanced V-band satellite systems; therefore, the Commission's proposed limitation and restriction with respect to earth terminals in the 37.5-40.0 GHz band should exclude the 1 GHz of spectrum at the 37.6-38.6 GHz band.

Although it may be feasible outside the 37.6-38.6 GHz band to limit the type of earth terminals deployed in the 37.5-40.0 GHz band, Hughes is concerned with the Commission's proposal to proscribe service to "individual consumers." The phrase "individual consumers" is unclear. For example, Hughes may wish to serve an individual retail customer or other business location with a larger earth terminal facility; however, the phrase "individual consumer" may be inappropriately construed to encompass this individual retailer. As it stands, the Commission's language does not adequately distinguish among possible end users of the service and, therefore, appears to be unnecessarily overbroad. Moreover, the Commission's proposed language may unduly restrict the deployment of earth stations that otherwise would not pose any problems for the terrestrial service.

VI. CONCLUSION

In sum, the record in this docket, along with the fifteen pending satellite system applications for V-band spectrum confirm that it is critical that the Commission allocate and make available sufficient expansion spectrum at V-band for satellite use. The record in this docket is also clear that the Commission's existing allocation of 2 GHz of paired V-band spectrum for high frequency satellite use is insufficient to promote, and indeed will have a profound effect on, the development of satellite systems at V-band.

The FNPRM provides the Commission the opportunity to go beyond simply rearranging the existing terrestrial and satellite V-band allocations and designations, and to

reapportion and equalize the allocations and designations in a way that comports with the record in this docket and the external developments since the Commission's Order on Reconsideration. Hughes respectfully requests that the Commission take this opportunity to satisfy more equitably the needs of all V-band spectrum users by allocating and designating at least 3 GHz of paired V-band spectrum for satellite use. This approach will provide critical expansion spectrum for next-generation FSS, BSS, and MSS systems.

Respectfully submitted,

HUGHES COMMUNICATIONS, INC.

/s/ Arthur S. Landerholm

Gary M. Epstein
John P. Janka
Arthur S. Landerholm
Dori K. Bailey
LATHAM & WATKINS
555 Eleventh Street, N.W.
Suite 1000
Washington, D.C. 20004
(202) 637-2200

September 4, 2001

Counsel for Hughes Communications, Inc.